Ticketing Tool Application

Project report submitted in partial fulfillment of the requirement for the degree of Bachelor of Technology

in

Computer Science and Engineering

By

Abhay Guleria

(191246)

Under the supervision of

Mr. Prateek Thakral

To

Department of Computer Science & Engineering

Jaypee University of Information Technology

Waknaghat, Solan

Certificate Candidate's Declaration

I hereby declare that the work presented in this report entitled **"Ticketing Tool Application"** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering** submitted in the department of Computer Science & Engineering and Information Technology**,** Jaypee University of Information Technology Waknaghat is an authentic record of my own work carried out over a period from Feb 2023 to May 2023 under the supervision of Mr. Prateek Thakral (Assistant Professor, Department of CSE, Jaypee University of Information Technology, Waknaghat).

I also authenticate that I have carried out the above mentioned project work under the proficiency stream "**Ticketing Tool Application".**

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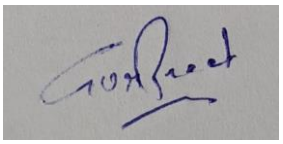

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All compliments and praise are due to God who empowered me with strength and sense of devotion to successfully accomplish this project work successfully.

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Abhay Guleria

(191246)

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List Of Abbreviations

Sr. No.	Abbreviations	Full Form
1	SSFB	Shivalik Small Finance Bank
2	SQL	Structured Query Language
3	API	Application Programme Interface
4	REST	Representational State Transfer
5	SOAP	Simple Object Access Protocol
6	AML	Anti-Money Laundering
7	LOS	loan origination system
8	NACH	National Automated Clearing House
9	CTS	Cheque Truncation system
10	CRM	Client Relationship Management

ABSTRACT

The SSFB Helpdesk Ticketing Tool is a software application developed by Shivalik Small Finance Bank (SSFB) to manage and track customer service requests. The tool is based on Microsoft Power Apps and offers a range of features including ticket creation, assignment, tracking, and reporting. The objective of the tool is to improve customer satisfaction by providing timely and efficient support while streamlining operations and reducing costs for the bank.

This report provides an overview of the SSFB Helpdesk Ticketing Tool, including its features and functionality, implementation process, monitoring and evaluation, challenges faced and overcome, and potential for future development. The report also highlights the benefits of the tool, including improved customer satisfaction, increased efficiency and productivity, and reduced costs.

The methodology used in the development and implementation of the tool is described, including the selection of Microsoft Power Apps as the platform and the workflow and user interface design. The report also includes a literature survey of helpdesk ticketing tools and their benefits.

Overall, the SSFB Helpdesk Ticketing Tool has been successful in improving customer service operations for SSFB and has the potential for further development and integration with other systems and tools. The tool has demonstrated its ability to streamline operations, reduce costs, and improve customer satisfaction, making it a valuable asset for the bank.

List of Figures

CHAPTER : 1
INTRODUCTION

1.1 Introduction

The purpose of this report is to provide an in-depth analysis of Shivalik Bank, its business model, and its performance over the years. The report will begin with a brief history of the bank, followed by an overview of its products and services. The report will also cover the bank's financial performance, its corporate governance, and its social responsibility initiatives.

The Bank has unequaled agility thanks to the cloud-based architecture, which enables cost-effective scale management and growth. Shivalik is a direct member of the National Financial Switch and is accessible on all retail payment platforms. Shivalik Bank is a small finance bank that was granted the license by the Reserve Bank of India in 2017. The bank is headquartered in Dehradun, Uttarakhand, India. Shivalik Bank has been established with the aim of providing financial services to underprivileged and underserved segments of the society, including micro, small, and medium enterprises (MSMEs), farmers, self-help groups (SHGs), and low-income households.

1.1.1 Products and Services of Shivalik Bank:

Shivalik Bank is a small finance bank that offers a wide range of financial products and services to cater to the needs of various customer segments. The bank has been established with the aim of providing financial services to underprivileged and underserved segments of the society, including micro, small, and medium enterprises (MSMEs), farmers, self-help groups (SHGs), and low-income households.

- **Deposit Schemes**

Shivalik Bank offers a variety of deposit schemes to its customers, including savings accounts, current accounts, fixed deposits, and recurring deposits. The bank offers attractive interest rates on its deposit schemes, which are competitive with those offered by other banks in the market. The bank also offers various value-added services with its deposit schemes, such as free debit cards, internet banking, mobile banking, and SMS banking.

- **-Savings Accounts**

Shivalik Bank offers savings accounts to its customers, which can be opened with a minimum deposit of Rs. 500. The bank offers competitive interest rates on its savings accounts, which are credited to the account on a quarterly basis. The bank also offers various value-added services with its savings accounts, such as free debit cards, internet banking, mobile banking, and SMS banking.

- **Current Accounts**

Shivalik Bank offers current accounts to its customers, which can be opened with a minimum deposit of Rs. 5,000. The bank offers attractive interest rates on its current accounts, which are calculated on the daily closing balance of the account. The bank also offers various value-added services with its current accounts, such as free debit cards, internet banking, mobile banking, and SMS banking.

- **Fixed Deposits**

Shivalik Bank offers fixed deposit schemes to its customers, with a minimum deposit of Rs. 1,000. The bank offers attractive interest rates on its fixed deposits, which are fixed at the time of opening the account. The bank offers various tenures for its fixed deposit schemes, ranging from 7 days to 10 years.

- **Recurring Deposits:**

Shivalik Bank offers recurring deposit schemes to its customers, with a minimum monthly deposit of Rs. 100. The bank offers attractive interest rates on its

recurring deposits, which are fixed at the time of opening the account. The bank offers various tenures for its recurring deposit schemes, ranging from 6 months to 10 years.

- **Loan Products**

Shivalik Bank offers a range of loan products to cater to the needs of various customer segments, including MSMEs, farmers, SHGs, and low-income households. The bank offers competitive interest rates on its loan products, which are in line with those offered by other banks in the market. The bank also offers various value-added services with its loan products, such as online loan application, doorstep service, and quick loan processing.

- **MSME Loans:**

Shivalik Bank offers MSME loans to entrepreneurs who want to start or expand their business. The bank offers various types of MSME loans, such as working capital loans, term loans, and machinery loans. The bank offers flexible repayment options for its MSME loans, ranging from 12 months to 5 years.

- **Agriculture Loans:**

Shivalik Bank offers agriculture loans to farmers who want to finance their agricultural activities. The bank offers various types of agriculture loans, such as crop loans, livestock loans, and farm machinery loans. The bank offers flexible repayment options for its agriculture loans, ranging from 6 months to 3 years.

- **Housing Loans:**

Shivalik Bank offers housing loans to individuals who want to buy or construct a house. The bank offers housing loans for both salaried and self-employed individuals.

1.1.2 The bank offers Social Responsibility Initiatives of Shivalik Bank:

As a socially responsible organization, Shivalik Bank has undertaken several initiatives for the betterment of the society. In this section, we will discuss some of the key social responsibility initiatives taken by the bank.

- **Financial Inclusion:**

Shivalik Bank has been actively promoting financial inclusion in the rural and semi-urban areas. The bank has been providing banking services to the unbanked and underbanked population through its various branches and business correspondents. The bank has also launched several financial literacy programs to educate people about the importance of saving, investing and banking.

- **Education:**

Shivalik Bank has been promoting education through various initiatives. The bank has provided financial assistance to several schools and educational institutions to improve the quality of education. The bank has also launched scholarship programs for meritorious students to support their education.

- **Healthcare:**

Shivalik Bank has been supporting healthcare initiatives in the rural areas. The bank has provided financial assistance to several hospitals and clinics to improve their infrastructure and facilities. The bank has also organized several health camps and awareness programs to educate people about health and hygiene.

- **Environment:**

Shivalik Bank has been promoting environmental sustainability through various initiatives. The bank has launched several campaigns to promote eco-friendly practices and reduce carbon footprint. The bank has also undertaken several plantation drives to increase green cover and support biodiversity.

- **Women Empowerment:**

Shivalik Bank has been promoting women empowerment through various initiatives. The bank has launched several skill development and vocational training programs for women to enhance their employability. The bank has also provided financial assistance to several women entrepreneurs to start their own business.

- **Disaster Relief:**

Shivalik Bank has been actively supporting disaster relief efforts in the country. The bank has provided financial assistance to several relief organizations to support their efforts in providing relief to the affected people. The bank has also organized several relief camps and distributed relief materials to the affected people.In conclusion, Shivalik Bank has undertaken several social responsibility initiatives to contribute to the betterment of the society. The bank has been actively promoting financial inclusion, education, healthcare, environment, women empowerment, and disaster relief. The bank's initiatives have helped to improve the lives of people in the society and support sustainable development.

1.1.3 Shivalik Bank API Banking:

Shivalik's developer portal offers a wide variety of APIs that may be used to jointly design unique solutions. Check out and test out our APIs, use cases, documentation, and reference manual. Build your digital products and apps by giving them access to Shivalik Bank APIs for a

The APIs are easy to use, flexible and quick to deploy.
Some of these APIs are:

- **KYC:**

E-KYC through Aadhar-based OTP.
E-KYC through Aadhar-based Biometric.
PAN Validation.

Aadhar Data Vault Management.

CKYC Search and Download.

Bureau Check- CIBIL/Experian/CRIF.

- **Customer Onboarding:**

Retail Customer Onboarding – CIF Creation and modification.

De-duplication check.

Customer KYC and Risk rating management.

- **Accounts and Deposits:**

Open and Manage Savings Account.

Open and Manage Fixed Deposit Account.

Open and Manage Recurring Deposit Account.

Open and Manager Flexi-Recurring Deposit Account.

Fetch Effective Interest Rate for Deposit Accounts.

Close Deposit Accounts.

Inquire Savings and Deposit Accounts.

- **Payments:**

Fund Transfer through IMPS.

Fund Transfer through NEFT/RTGS.

Recurring Fund Transfer through NEFT/RTGS.

Bulk Fund Transfer – WIP.

Cash Withdrawal and Fund Transfer through AEPS - WIP.

- **Lending :**

Open and Manage Loan Account – EI/Non-EI.

Lodge and Link Collateral.

Disbursement into Loan Account - Internal.

Disbursement into Loan Account – External Bank A/c.

Loan Overdue Position Inquiry.

Scheduled Collection into Loan Account.

Loan Account Inquiry.

- **Cards:**

Hotlist Debit Card.

Authenticate using Debit Card.

Debit Card Management- Change PIN, Limits etc.

Issue Virtual Debit Card – WIP.

Issue Prepaid Card – WIP.

- **Workflow:**

Retail Customer Onboarding.

Savings Account Opening.

Online Loan Sanctioning/Underwriting.

Loan eligibility check through CRIF for Microfinance.

- **Overdraft:**

Open and Manage OD Account.

Open OD Account against FD.

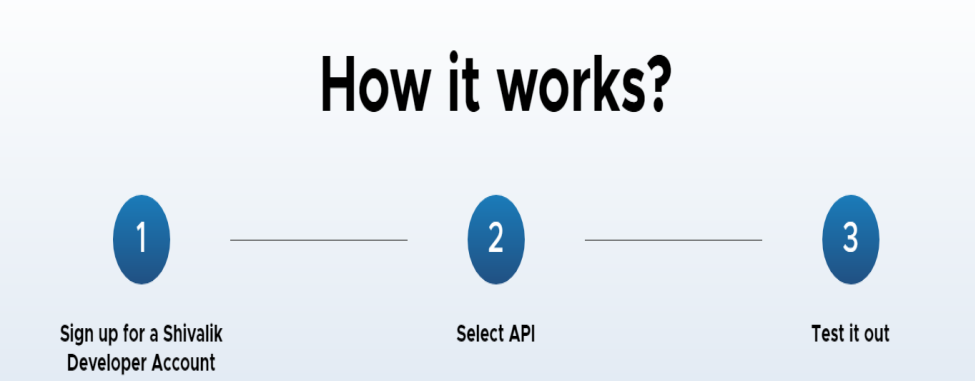

Fig No:1.1: Working Of API(Application Programming Interface)

1.1.4 Shivalik – API Developer Portal

Shivalik bank offers an open API platform for small businesses, SMEs, Start-ups, FinTech's, developers and companies in the BFSI domain to review and test our APIs in the sandbox environment and ultimately launch new products and services. Application Programming Interface, or API, is an abbreviation for that. It is an information-transfer software tool that enables communication between two programmes .To get another application to accept input, carry out a task, and return standardized output to the original programme ,one application utilizes an API to send a standardized request to the other application. An API key is required in order to connect to or communicate with another API.

Computer programmes transmit an alphanumeric code known as an API key. To identify its user, developer, or calling programme to a website, the programme or application then contacts the API, or application programming interface. Both a secret authentication token and a distinctive identifier can be used with an API key.

The key often comes with a set of access privileges for the API that it is linked to. A user can generate as many API Keys as required. There is no cost involved for reviewing or testing the APIs in the sandbox. However, to go-live with your products and services using our APIs, cost involved would be driven through the terms of engagement that both the parties enter.

As a standard, we support REST APIs with JSON payloads (Get/Post) while SOAP APIs can be supported as well. You need to register in order to get access to the API sandbox for reviewing or testing the APIs with dummy payloads. You can reach us out through the "contact us" form or drop us an email on the mentioned Email Id for any assistance or queries. Our team will get in touch with you within 2 working days with a resolution or a response.

1.2 Problem statement of SSS-FB Helpdesk Tool

The problem statement of the SSS-FB Helpdesk Tool can be summarized as follows:

SSSFB, a small finance bank, faced several challenges in managing their customer service operations. Their existing manual ticketing system was inefficient and resulted in slow response times, low customer satisfaction, and high operational costs. The bank needed a more effective and streamlined solution to manage customer service requests and improve the overall customer experience.

To address these issues, the bank decided to develop a Helpdesk Ticketing Tool. The tool needed to automate the ticketing process, provide real-time visibility into ticket status and resolution progress, and enable effective communication between customer service representatives and customers. Additionally, the tool needed to be cost-effective and scalable to support the bank's growing customer base.

1.3 Objectives

The primary objective of the Helpdesk Ticketing Tool was to improve customer service operations and enhance customer satisfaction by providing a seamless and efficient ticketing process. The tool was also expected to reduce operational costs and increase productivity by automating manual tasks and enabling better communication and collaboration among customer service representatives.

To achieve these objectives, the bank decided to implement the Helpdesk Ticketing Tool using Microsoft Power Apps, which offered a powerful and customizable platform for building custom business applications. The tool was designed to incorporate features such as Power BI, Power FX, Power Automate, and SQL Server to enable real-time reporting, data analysis, and automation of repetitive tasks.

1.4 Methodology

The methodology of the SSFB Helpdesk Ticketing Tool involves several stages, which include:

- **Requirement Analysis:** The first step in developing the tool is to conduct a comprehensive requirement analysis to determine the specific needs and objectives of the organization's customer service operations. This stage involves gathering information on the current customer service processes, identifying areas that need improvement, and establishing the key requirements for the tool.

- **Design:** Based on the requirements analysis, the next stage is to design the tool. This stage involves creating a detailed blueprint of the tool, including the user interface, features, and functionality. The design stage requires collaboration between the customer service team and the development team to ensure that the tool meets the specific needs of the organization.

- **Development:** Once the design is complete, the development team can begin building the tool. This stage involves creating the tool's core functionality, integrating it with other systems, and ensuring that it meets the required standards.

- **Testing:** After development is complete, the tool undergoes rigorous testing to identify and fix any issues. Testing is done in various environments to ensure that the tool works correctly in different scenarios.

- **Implementation:** Once the tool is thoroughly tested, it can be implemented. Implementation involves installing the tool, training the customer service team on how to use it, and ensuring that it meets the objectives set out in the requirement analysis.

- **Maintenance and Support:** After implementation, the tool requires ongoing maintenance and support to ensure that it continues to function correctly. This stage involves monitoring the tool's performance, identifying and fixing any issues, and providing support to users who encounter problems.

1.5 Organization

Shivalik was India's first Small Finance Bank to evolve from an Urban Co-operative Bank. In providing retail banking products and services, it is backed by more than 24 years of banking experience. Shivalik has always placed a strong emphasis on technology, with customer centricity as a fundamental tenet. The Infosys Finacle Core Banking and Digital Banking Suite, which includes online and mobile banking, power the Bank.

The ideals of the Organisation are incorporated with diverse elements of nature in the Shivalik Bank logo. The small green mountain/triangle and the blue on top of the image icon in the photo stand for the earth and the sky, respectively. It also suggests reaching upward because there is an arrow pointing up. These characteristics are essential to the company's values since Shivalik Bank strives to stand securely on the ground while reaching for the stars.

Mountains are symbolic of stability, strength, and growth when seen abstractly. The image's mountain range, which is hidden by other mountains, Symbolizes the brand's forward-thinking nature. For all of our services, we are interconnected, and the team's collective effort is as powerful as a mountain range.

Shivalik has always placed a strong emphasis on technology, with customer centricity as a fundamental tenet. The Infosys Finacle Core Banking and Digital Banking Suite, which includes online and mobile banking, power the Bank.

CHAPTER : 2
LITERATURE SURVEY

Literature survey

A helpdesk ticketing tool is an essential tool for any organization that aims to provide excellent customer service. It enables organizations to manage customer inquiries and complaints effectively, ensuring timely resolution and customer satisfaction. Several studies have examined the use of helpdesk ticketing tools in improving customer service and increasing productivity.

One study by Gupta and Sahoo (2018) investigated the implementation of a helpdesk ticketing tool in a healthcare organization. The study found that the tool improved the efficiency of the organization's customer service team and increased customer satisfaction. The study recommended the adoption of similar tools in other healthcare organizations to enhance customer service delivery.

Another study by Almutairi (2019) explored the use of helpdesk ticketing tools in the banking sector. The study found that the tool improved the overall performance of the banks and helped them to meet customer needs promptly. The study recommended the integration of helpdesk ticketing tools with other digital banking channels to improve customer service delivery.

In a study by Bambury and Lynch (2018), the authors examined the impact of helpdesk ticketing tools on customer service and employee productivity in the software development industry. The study found that the tool improved customer satisfaction and reduced response times significantly. The study recommended the adoption of similar tools in other industries to enhance customer service delivery.

In a study by Luet Al (2019), the authors investigated the impact of helpdesk ticketing tools on customer service in the e-commerce industry. The study found that the tool improved customer satisfaction and increased customer loyalty. The study recommended the integration of helpdesk ticketing tools with other e-commerce channels to improve customer service delivery.

Another study by Saleh and Al-Ashqar (2021) examined the impact of helpdesk ticketing tools on customer service and employee productivity in the telecommunications industry. The study found that the tool improved customer satisfaction and reduced response times. The study recommended the adoption of similar tools in other industries to enhance customer service delivery.

Overall, the literature survey indicates that the use of helpdesk ticketing tools has a positive impact on customer service delivery and employee productivity. The studies recommend the adoption of similar tools in other industries to enhance customer service delivery.

CHAPTER : 3
SYSTEM DEVELOPMENT

3.1 System Overview

3.1.1 Power App

Microsoft PowerApps programme enables you to quickly create and distribute robust low-code applications. It is a collection of software, services, and data platforms that enables rapid application development to create unique software based on corporate needs.

With Excel, Office 365, SharePoint, and other on-premises applications, as well as with data platforms (common data sources for apps), you can easily construct unique business apps that connect to your company's data.
At its core, Power Apps is a platform as a service that enables you to develop programmes that work with any mobile platform or web browser. To enable users to create applications with additional capabilities without coding knowledge, Power Apps were created. Microsoft boasts that PowerApps have an initial visual design and drag-and-drop capability.

3.1.1 Sharepoint

SharePoint is a cloud-based database management and collaboration platform developed by Microsoft. It provides a secure and centralized location for storing and managing data, documents, and information within an organization. In the context of a helpdesk ticketing tool, SharePoint can be used to store and manage various types of data related to customer support, such as user profiles, support tickets, service level agreements, and knowledge base articles.

One of the key advantages of using SharePoint as a database for a helpdesk ticketing tool is its flexibility and scalability. SharePoint allows for customization

of data fields, forms, and workflows to meet the specific needs of an organization. It also integrates with other Microsoft tools and applications, such as Power BI and Power Apps, to provide advanced reporting and analytics capabilities.

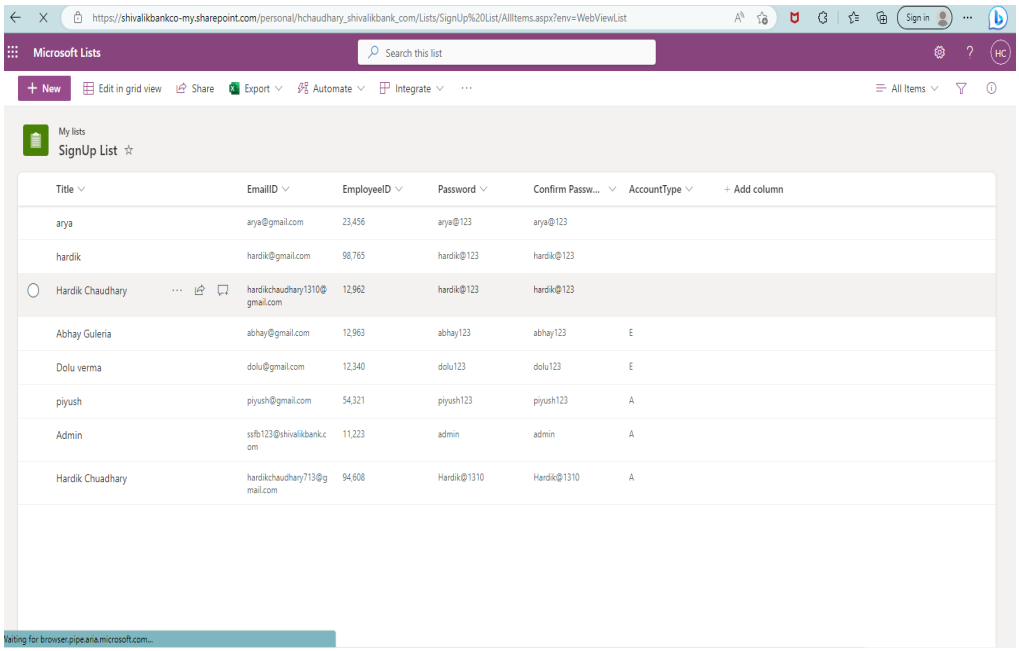

Fig No:3.1: SharePoint Cloud Database To Store User Information Fields

Another advantage of using SharePoint is its accessibility. Since it is a cloud-based platform, users can access the database and information from anywhere with an internet connection. Additionally, SharePoint provides built-in security features, such as user authentication and authorization, to protect sensitive data.

3.2 System Algorithm

Easy connection to other Microsoft services, such as Excel, OneDrive, SharePoint, etc.: Connecting Power Apps to other Microsoft services is one of the main benefits of utilizing them.

Friendly User Interface: Power Apps offer a friendly user interface. Even if you have no prior knowledge of development, you can still simply create an app with this. Make CRUD-capable interfaces for applications.

- **There are two methods for developing apps with Power Apps:**

The Canvas approach and the Model-driven Approach. Simply dragging and dropping pieces onto a canvas is all it takes to develop an app. In model-driven apps, the components you add dictate and specify a large portion of the layout.

- **Cloud Connectivity:**

Using Power Apps, it's really simple to connect to cloud services like SQL, Dropbox, Google Drive, etc. Creating and Disseminating apps supports the building of programmers using a simple drag-and-drop interface. Power Apps make sharing with whomever you choose simple.

- **Cost-effective:** Start using this wonderful tool if you want to build complex business applications but can't pay developers. Power Apps are reasonably priced.

Power BI, Power Apps, and Flow are all parts of the Microsoft Power Platform. The data management tools for any enterprise operation are provided by these three services.

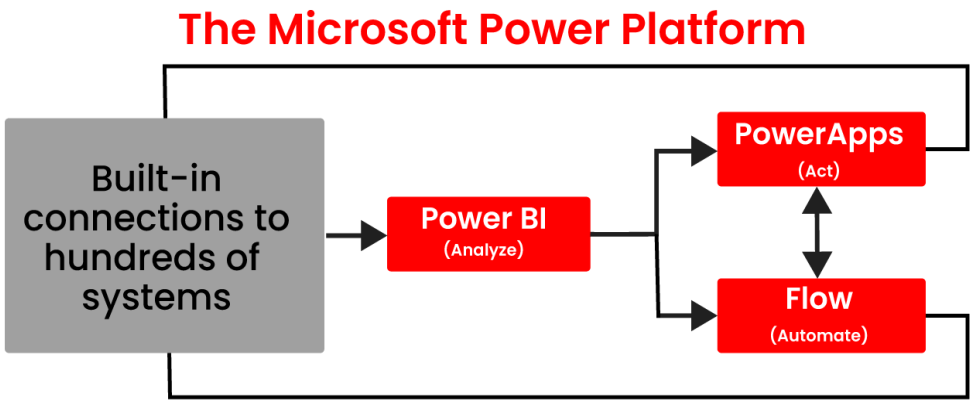

Fig No:3.2 :WorkFlow Of Power BI

The data is displayed and examined using Power BI. It is an interactive, real-time BI tool for data Visualization. Data changes are made using PowerApps. It quickly creates apps for the web, Android, & iOS devices with less code. Information is automated using Microsoft Flow. With a no-code approach and simple integration, it provides effective workflow automation.

3.3 System Design

Design:

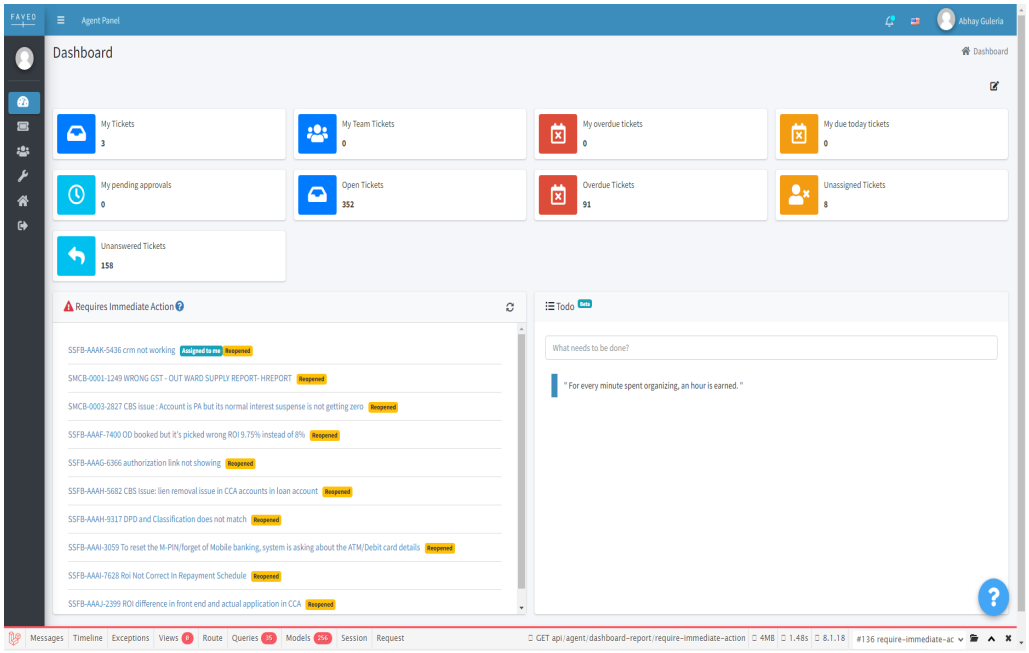

Fig No: 3.3: HelpDesk Tool

3.3.1 Microsoft SQL Server:

Microsoft created and sells SQL Server, a relational database management system (RDBMS). SQL Server is based on SQL, a common programming language for communicating with relational databases, same like other RDBMS applications. The Microsoft SQL implementation known as Transact-SQL, or T-SQL, which includes a number of exclusive programming constructs, is linked to SQL Server.

For over 20 years, SQL Server has only operated in the Windows environment. Microsoft made it available on Linux in 2016. In October 2016, the Windows and Linux-compatible SQL Server 2017 version became generally available.

3.3.2 Engine for databases:

The Database Engine is the main part of the SQL Server. The database engine is made up of a relational engine for handling queries and a storage engine for keeping track of database files, pages, indexes, etc. The Database Engine also creates and runs database objects including stored procedures, views, and triggers.

- **Database Engine**:

The parts that choose how to execute a query are found in the Relational Engine. The query processor is another name for the relational engine. Based on the input query, the relational engine asks the storage engine for data and processes the results.

3.3.3 Tools and Services for SQL Server:

Together with SQL Server, Microsoft offers tools and services for data management as well as BI .

SSIS, SQL Server Data Quality Services, and SQL Server Master Data Services are all components of SQL Server that are used for data management. SQL Server offers SQL Server Data tools for database development, and SQL Server Management Studio (SSMS) for managing, deploying, and monitoring databases.

SQL Server provides SQL Server Analysis Services (SSAS) for data analysis. SSRS, or SQL Server Reporting Services, offers reports and data Visualization. The initial version of the Machine Learning Services technology, formerly known as R Services, was included in SQL Server 2016.

3.4 System Implementation

3.4.1 Implementation:

- Requirements and Objectives.
- Platform and Tool.
- Workflow and User Interface.
- Develop and Test the Tool.
- Deploy the Tool and Train Users.
- Monitor and Evaluate Performance.

- **Requirements and Objectives:**

The design and implementation of the tool will be more likely to fulfill the needs of the support team and be in line with organizational goals if requirements and objectives are clearly defined. It also offers a framework for assessing the tool's effectiveness once it has been used. The organization may ensure that the tool is designed and used in a way that fulfills their specific demands and helps to the organization's overall success by carefully outlining criteria and objectives.

On the other side, objectives require determining the desired results of using the instrument. These can include enhancing client happiness, speeding up support team response times, and boosting team productivity. To make sure that the tool is in line with the organization's overall strategy, it is crucial to take the broader organizational goals into account when setting targets.

- **Platform and Tool:**

The platform utilized for the SSFB Helpdesk Ticketing Tool is Microsoft Power Apps.

With the help of Microsoft Power Apps, developers may create bespoke applications without having substantial coding skills. It offers a drag-and-drop interface that makes it simple and quick for developers to design applications.

Developers can leverage the platform's extensive library of templates and pre-built components to speed up the development process.

The SSFB Helpdesk Ticketing Tool was developed using the Power Apps platform, which offers a flexible and adaptable framework. To enable its functionality, the tool uses a variety of parts and technologies, including Power BI, Power Automate, and SQL Server. The platform and tool work together to give the support team a strong way to manage support requests and respond to client issues quickly.

- **Workflow and User Interface:**

The creation of a new ticket initiates the tool's workflow. The customer support team opens a new ticket in the system when a customer submits a support request. The ticket includes information on the customer, the issue, and the priority level.

The user interface of the programme is created to be simple and intuitive. It has a number of features, including a dashboard that gives a summary of all open tickets, a ticket queue that allows the support agent to easily access and work on assigned tickets, and a reporting area that gives information about the performance of the support staff.

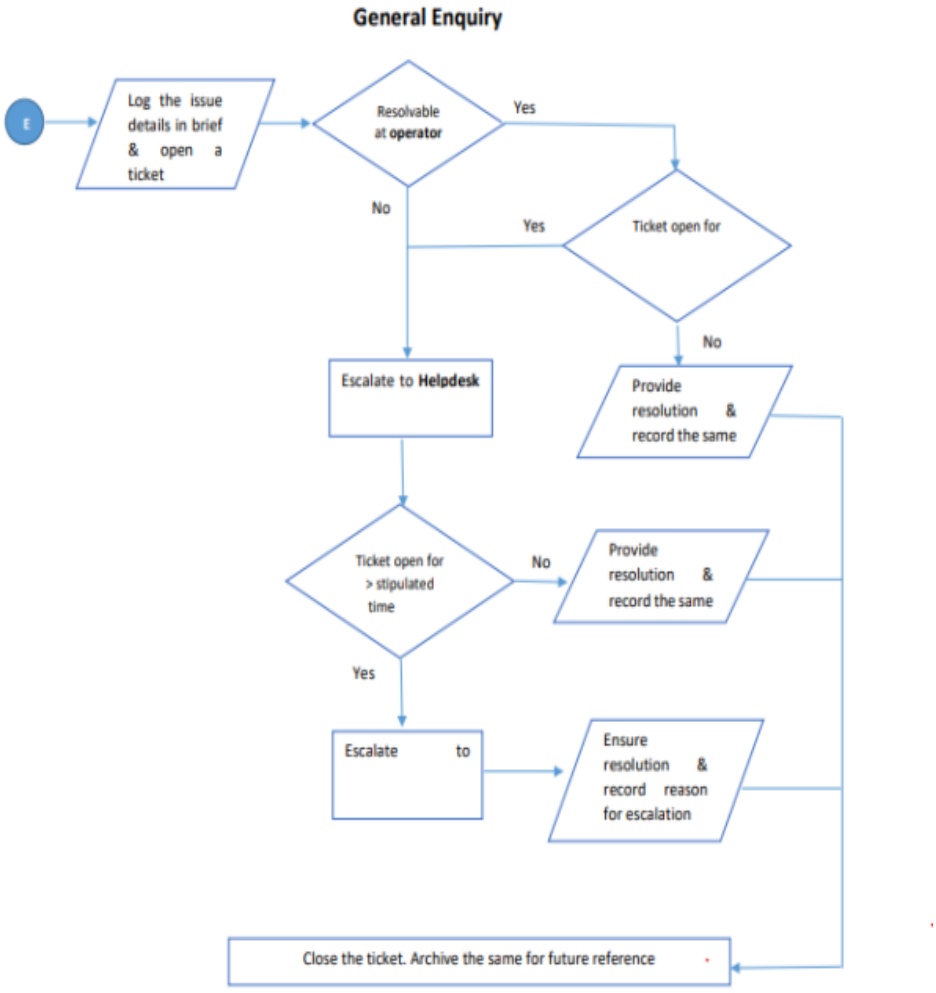

Fig No: 3.4 : WorkFlow Of Ticketing Tool

- **Deploy the Tool and Train Users:**

The development and testing phase of the SSFB Helpdesk Ticketing Tool was crucial to ensure that the tool was fully functional and met all the requirements and objectives outlined in the project scope.

The first step in the development process was to design the tool's architecture and user interface. The development team worked closely with the project stakeholders to ensure that the tool's features and functionality aligned with the requirements and objectives. Once the design was approved, the development team began coding the tool using Microsoft Power Apps, Power BI, Power FX, Power Automate, and SQL Server.

Once the tool was developed and tested, the team conducted a pilot test to evaluate its performance in a real-world environment. The pilot test involved a limited group of support agents who were asked to use the tool to manage support tickets for a specified period. The feedback obtained from the pilot test was used to fine-tune the tool's features and functionality to ensure that it was fully optimized for use in a production environment.

Overall, the development and testing phase of the SSFB Helpdesk Ticketing Tool was crucial to ensure that the tool was fully functional and met all the requirements and objectives outlined in the project scope. The testing helped identify and resolve any issues or bugs, and the pilot test helped fine-tune the tool's features and functionality for optimal performance.

- **Monitor and Evaluate Performance:**

To ensure that a helpdesk ticketing technology is effective at providing customers with timely and accurate service, it is essential to monitor and evaluate its performance. There are various ways to track and assess the effectiveness of the SSFB Helpdesk Ticketing Tool. Getting input from the support crew and customers is a crucial component of performance evaluation. Customers have the opportunity to share insightful feedback about their interactions with the tool, including how simple it is to use, how quickly problems are answered, and how satisfied they are with the service they receive.

Managers can pinpoint the parts of the tool that need improvement based on the input they have received. For instance, the user interface would need to be improved if consumers frequently complain that it is difficult to utilize the ticketing system. Alternatively, further training can be needed to maximize the tool's potential if support team members discover that some functionalities are being underutilized.

3.4.2 PowerApps Implementation

Microsoft PowerApps programme enables you to quickly create and distribute robust low-code applications. It is a collection of software, services, and data platforms that enables rapid application development to create unique software based on corporate needs.

With Excel, Office 365, SharePoint, and other on-premises applications, as well as with data platforms (common data sources for apps), you can easily construct unique business apps that connect to your company's data.

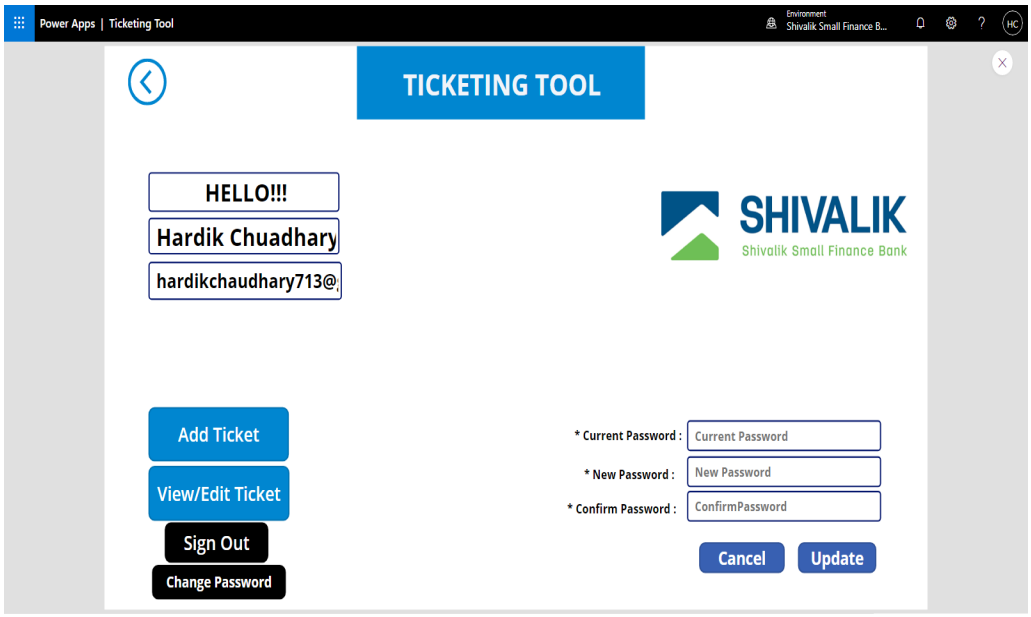

Fig No:3.5: Home Page Of Ticketing Tool

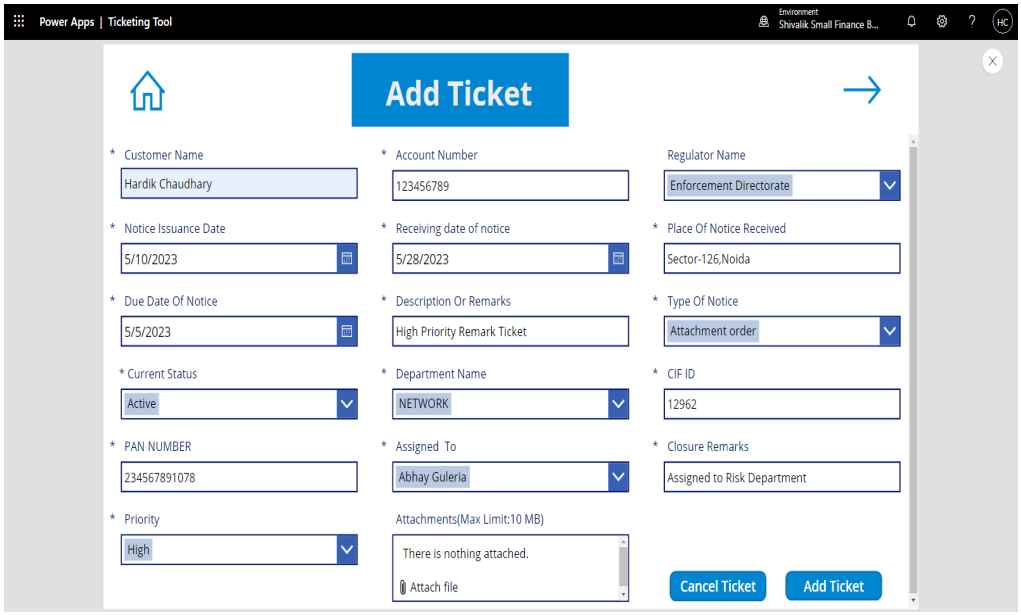

Fig No:3.6: New Tickets

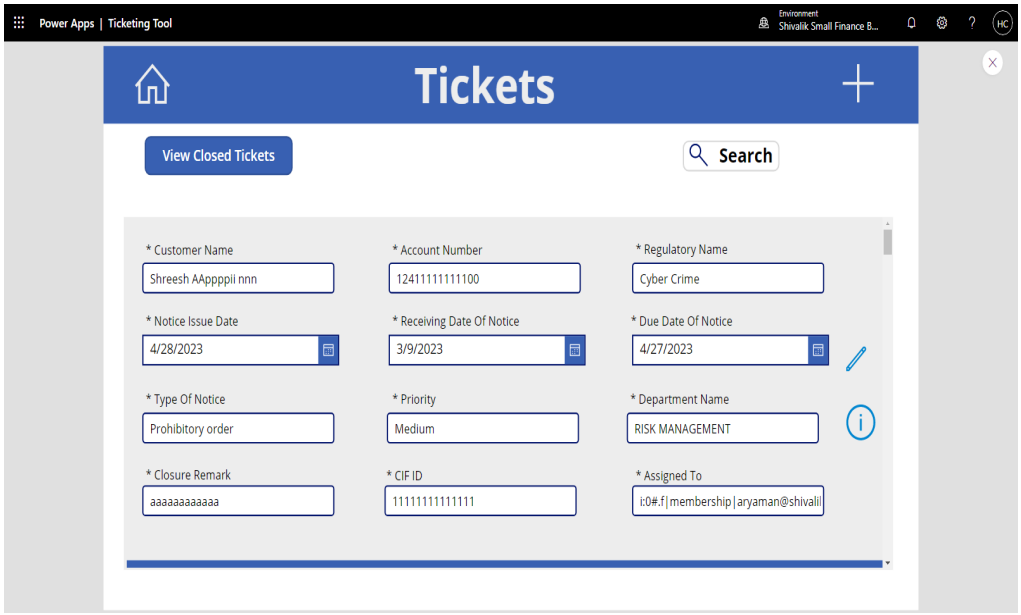

Fig No:3.7: View All Tickets

- **Features of Microsoft PowerApps:**

With the use of Power Apps' features, you may create apps without knowing any code. The impressive features of Power Apps are given below:

3.4.3 Microsoft Power Automate:

Microsoft Power Automate is a solution for linking many platforms and apps to automate processes and operations. Users can establish connections between Microsoft Office 365 apps in both cloud and on-premises environments, as well as to a wide library of additional applications.

Users who merely have a fundamental understanding of Office 365 can quickly and simply construct simple automations to simplify day-to-day corporate operations. Advanced users can build unique business processes using Microsoft Power Apps or Power BI. Users may quickly diagram how applications should communicate with one another using workflows, often known as flows.

By using connectors, Power Automate makes it simple to link with other programmes or services. A connector connects two applications. Data is "moved" in this fashion from one application to another. Connectors make it simple to transfer data from one application to another.

You can use the Power Automate service to automate monotonous operations and increase productivity within any organization. Cloud flows, desktop flows, and business process flows can all be made.

Line-of-business users can create workflows that automate time-consuming business operations and procedures across applications and services with the help of the cloud service Power Automate.

CHAPTER : 4

Performance Analysis

4.1 Analysis

The SSFB Helpdesk Ticketing Tool also provides visualization capabilities that support team leads and managers can use to analyze data. The tool can generate visual representations of data, such as graphs and charts, which provide a quick and easy way to interpret the data. The visualization capabilities of the tool make it easier for support team leads and managers to identify trends and patterns in the data and make informed decisions.

The visualization capabilities of the SSFB Helpdesk Ticketing Tool also provide a quick and easy way to communicate data to stakeholders.

4.1.1 Analytics and Business Intelligence:

Another important use of Finacle is its analytics and business intelligence capabilities. The software provides real-time dashboards, reports, and visualizations that help banks to monitor their performance, identify trends, and track key metrics. This helps banks to make data-driven decisions and improve their operational efficiency and profitability.

4.1.2 Enhanced Data and Analytics:

The SSFB Helpdesk Ticketing Tool offers insightful statistics and insights on the effectiveness of customer assistance. The bank can measure and analyze customer service indicators including response times, ticket volume, and customer satisfaction levels thanks to the tool's reporting and analytics features. The bank's customer care operations can be improved by using this data to pinpoint problem areas. For instance, the bank can look into the root cause and take action to fix the issue if the technology shows that a specific sort of issue is routinely taking longer to handle than others. This could aid in raising customer satisfaction and overall customer service performance.

4.2 Performance Requirements

4.2.1 Client Relationship Management (CRM)

Finacle offers a powerful CRM module that enables banks to manage their client interactions successfully. The CRM module assists banks in gathering and analyzing client data, monitoring customer interactions, and offering customers individualized services.

Finacle provides a variety of digital banking solutions that let banks offer smooth and secure financial services to consumers via various channels, such as mobile, the internet, and social media. Digital payments, online banking, social media banking, and mobile banking are all examples of digital banking systems.

- **Payments and Transactions:** Finacle has a thorough payments and transactions module that allows banks to handle and conduct a variety of transactions, such as domestic and international payments, money transfers, and bill payments.

- **Enhanced Operational Efficiency:** Finacle's extensive and adaptable modules assist banks in streamlining their operations and automating numerous repetitive procedures, enhancing production.

- **Improved Risk Management:** The compliance management and risk management capabilities of Finacle assist banks in managing their regulatory requirements and mitigating hazards, lowering the risk of monetary losses and reputational harm.

4.2.2 Customer Management

Customer management is one of Finacle's main applications. The programme gives banks access to a potent CRM module that enables them to collect and analyze client data, monitor customer interactions, and provide customers

individualized services. In today's competitive banking environment, this aids banks in enhancing customer engagement, loyalty, and retention.

4.2.3 Payments and Transactions

Another crucial application of the programme is the payments and transactions module of Finacle. It enables banks to control and handle a variety of transactions, including bill payments, money transfers, and local and international payments. The module gives banks real-time visibility into their payment and transaction flows, enabling them to see and swiftly fix any problems.

4.2.4 Core Banking Operations

As a core banking software solution, Finacle is primarily intended to manage all of a financial institution's vital banking processes. Taking care of customer accounts, loans, deposits, payments, and transactions is included in this. The software is a crucial tool for banks and other financial organizations because it offers an extensive and adaptable solution for all fundamental banking processes.

4.3 Security Requirements

4.3.1 Key Features of the SSFB Helpdesk Ticketing Tool:

The SSFB Helpdesk Ticketing Tool has several key features that make it an effective tool for managing customer service requests. These include:

- **Ticket Creation and Assignment:**

Customers can use the tool to create and submit tickets for problems they are having with their banking. The customer care agent responsible for resolving the issue is then automatically allocated to these tickets.

- **Ticket Tracking:**

The tool allows both customers and customer service representatives to track the status of their tickets in real-time. This provides customers with visibility into the

progress of their issue and helps customer service representatives ensure that all tickets are being addressed promptly.

- **Escalation Management**

The tool includes a built-in escalation management system that automatically escalates tickets to higher-level representatives if they are not addressed within a certain timeframe. This ensures that critical issues are addressed promptly and that customers are not left waiting for a resolution.

- **Reporting and Analytics**

With the help of the platform, the bank is able to measure and analyze customer service indicators including response times, ticket volume, and customer satisfaction scores. The tool also offers sophisticated reporting and analytics capabilities. The bank's customer care operations can be improved by using this data to pinpoint problem areas.

4.3.2 Benefits of the SSFB Helpdesk Ticketing Tool:

The SSFB Helpdesk Ticketing Tool offers several benefits to both the bank and its customers. These include:

- **Improved Customer Satisfaction:**

By providing a fast, efficient, and high-quality customer service experience, the tool helps to improve customer satisfaction and loyalty.

- **Increased Efficiency:**

The tool streamlines and automates many aspects of the customer service process, reducing the workload for customer service representatives and enabling them to handle more tickets in less time.

- **Enhanced Data and Analytics:**

The tool provides valuable data and analytics on customer service performance, which can be used to identify areas for improvement and optimize the bank's operations.

- **Reduced Costs:**

By automating many aspects of the customer service process and enabling representatives to handle more tickets in less time, the tool can help to reduce costs and improve the bank's bottom line.

4.3.3 Importance of security tool for customer service:

The SSFB Helpdesk Ticketing Tool is a crucial asset for Shivalik Small Finance Bank's customer service operations.

In this section, we will explore the importance of the tool for customer service in detail.

- **Centralized Platform for Customer Support:**

A centralized platform for monitoring and tracking customer support requests and issues is offered by the SSFB Helpdesk Ticketing Tool. This enables the bank to guarantee that all customer concerns are promptly and effectively handled and that customers are happy with the quality of assistance they receive.

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- **Increased Efficiency:**

Numerous steps in the customer care process are streamlined and automated by the SSFB Helpdesk Ticketing Tool. The tool's ticket creation and assignment capability assigns tickets to the customer care agent in charge of fixing the problem automatically. Customers and customer care personnel can both track the status of their tickets in real-time using the tool's ticket tracking feature.

- **Improved Customer Satisfaction:**

By offering quick, effective, and high-quality customer support, the SSFB Helpdesk Ticketing Tool contributes to greater customer satisfaction. The technology makes sure that clients get timely and reliable support by offering a centralized platform for managing customer service requests and concerns.

- **Reduced Costs:**

By automating numerous steps in the customer support process and allowing personnel to handle more tickets in less time, the SSFB Helpdesk Ticketing Tool can help cut expenses. The bank's bottom line may benefit and staffing needs may be reduced as a result. Additionally, the bank may optimize its operations and save expenses in other areas by finding opportunities for improvement through the tool's reporting and analytics capabilities.

4.3.4 Customer service operations are built around several key components, including:

- **Customer Relationship Management (CRM):**

The CRM programme at SSFB is intended to assist the bank in cultivating long-lasting relationships with its clients. To acquire client input, pinpoint areas for improvement, and create strategies for enhancing customer happiness, the bank employs a range of tools and techniques. In order to track client interactions and make sure that customer service employees have access to the data they need to deliver quality support, SSFB also maintains a sizable customer database.

- **Customer Service Channels:**

In order to make it simple for customers to contact the bank and obtain timely assistance, SSFB offers a variety of customer service channels. Phone help, email support, social media support, and in-person support at the bank's branches are some of these channels. Customers receive consistent and efficient support regardless of the channel they select thanks to the bank's customer care

representatives who are qualified to handle questions and problems across all of these platforms.

- **Helpdesk Ticketing Tool:**

The Helpdesk Ticketing Tool is one of the most important resources used by SSFB to handle customer care requests and problems. A centralized platform for managing and tracking customer assistance tickets is offered by this Microsoft Power App.

- **Training and Development:**

SSFB places a strong emphasis on training and development for its customer service representatives. The bank provides comprehensive training to all new hires, including training on banking products and services, customer service techniques, and communication skills. The bank also provides ongoing training and development opportunities to ensure that its representatives are equipped with the skills and knowledge they need to provide effective support to customers.

- **Quality Assurance:**

SSFB's customer service operations are subject to regular quality assurance checks to ensure that the bank is providing the highest level of service possible. The bank uses a variety of tools and techniques to measure customer satisfaction, including customer surveys, mystery shopping, and feedback from social media channels. SSFB also conducts regular audits of its customer service operations to identify areas for improvement and develop strategies for enhancing the customer service experience.

4.3.5 The need for a helpdesk ticketing tool

In today's fast-paced world, businesses and organizations rely heavily on technology to manage their day-to-day operations. With this increased reliance on technology, there is a greater need for efficient and effective communication

between employees, departments, and customers. One important tool that has emerged in recent years to address this need is the helpdesk ticketing tool.

A helpdesk ticketing tool is a software application that enables businesses and organizations to manage customer support requests and internal IT issues in a streamlined and organized manner.

When a customer or employee submits a request or issue, a ticket is created that includes all relevant information about the request or issue, such as the nature of the problem, the priority level, and any relevant history or background. The bank provides comprehensive training to all new hires, including training on banking products and services, customer service techniques, and communication skills.

4.3.6 There are several benefits of using a helpdesk ticketing tool, including:

- **Improved Communication:**

A helpdesk ticketing tool provides a centralized platform for managing customer support requests and IT issues. This ensures that all requests and issues are tracked and managed in a consistent and organized manner, reducing the risk of miscommunication and ensuring that all relevant parties are kept up to date on the status of the request or issue.

- **Increased Efficiency:**

A helpdesk ticketing tool streamlines the process of managing customer support requests and IT issues, reducing the amount of time and effort required to resolve issues. With a helpdesk ticketing tool, requests and issues can be automatically assigned to the appropriate support representative, who can then work on resolving the issue without having to spend time searching for information or coordinating with other team members.

- **Enhanced Customer Service:**

A helpdesk ticketing tool can significantly improve the customer service experience by ensuring that all customer support requests are addressed promptly and effectively. With a helpdesk ticketing tool, customers can submit requests through a variety of channels, such as email or phone, and can track the progress of their request in real-time. This helps to build trust and confidence in the business or organization, and can lead to increased customer loyalty and satisfaction.

- **Improved Data Management:**

A helpdesk ticketing tool provides a centralized platform for managing customer support requests and IT issues, which makes it easier to collect and analyze data related to these requests and issues. This data can be used to identify patterns and trends, and to develop strategies for improving the customer service experience or addressing recurring IT issues.

- **Better Accountability:**

A helpdesk ticketing tool provides a clear and transparent record of all customer support requests and IT issues, including who is responsible for addressing each request or issue, and the status of each request or issue. This makes it easier to hold employees and teams accountable for their work, and ensures that all requests and issues are addressed in a timely and efficient manner.

4.3.7 The platform offers a wide range of features and functionality that make it ideal for developing a helpdesk ticketing tool, including:

- **Easy to Use:**

Microsoft Power Apps is designed to be easy to use, even for users with little or no coding experience. The platform offers a drag-and-drop interface that allows users to create custom applications quickly and easily, without the need for

extensive coding skills. This makes it ideal for businesses and organizations that want to develop custom applications quickly and efficiently.

- **Flexible:**

Microsoft Power Apps is a flexible platform that allows users to create custom applications that meet their specific needs. The platform offers a wide range of templates and pre-built components that can be customized to create a custom application that meets the specific needs of the organization.

- **Integration:**

Microsoft Power Apps can integrate with a wide range of other Microsoft services and applications, including Microsoft SharePoint, Microsoft Teams, and Microsoft Dynamics 365. This makes it easy to integrate the helpdesk ticketing tool with other systems and processes within the organization, reducing the risk of data silos and improving overall efficiency.

- **Scalability:**

Microsoft Power Apps is a scalable platform that can grow with the organization. The platform can handle large volumes of data and can support a large number of users, making it ideal for businesses and organizations that are looking to grow and expand in the future.

- **Security:**

Microsoft Power Apps offers robust security features that ensure that the data within the tool is secure and protected. The platform includes built-in security features, such as data encryption, access control, and authentication, that help to prevent unauthorized access and protect sensitive data.Overall, the selection of Microsoft Power Apps as the platform for the SSFB Helpdesk Ticketing Tool was based on the platform's ease of use, flexibility, integration capabilities, scalability, and security features.

4.4 Tool Features

The SSFB Helpdesk Ticketing Tool is a custom application built on the Microsoft Power Apps platform that offers a wide range of features and functionality to help manage customer support requests efficiently. In addition to the core features of the tool, there are several other components that make it a robust and powerful solution, including Power BI, Power FX, Power Automate, and SQL Server.

4.4.1 Power BI:

With a user-friendly and highly customizable interface, Power BI's business analytics tool offers interactive visualizations and business intelligence capabilities. Insights into customer support requests, such as the number of open tickets, ticket resolutions, and the average time to handle a ticket, are provided by the SSFB Helpdesk Ticketing Tool using Power BI. Managers and team leaders may swiftly analyze and comprehend the data using the Power BI dashboard to make wise decisions.Power BI provides various visualization options such as charts, tables, and maps, which can be customized according to the user's requirements. It also allows users to create complex calculations and data transformations using DAX (Data Analysis Expressions) formula language. Power BI integrates with other

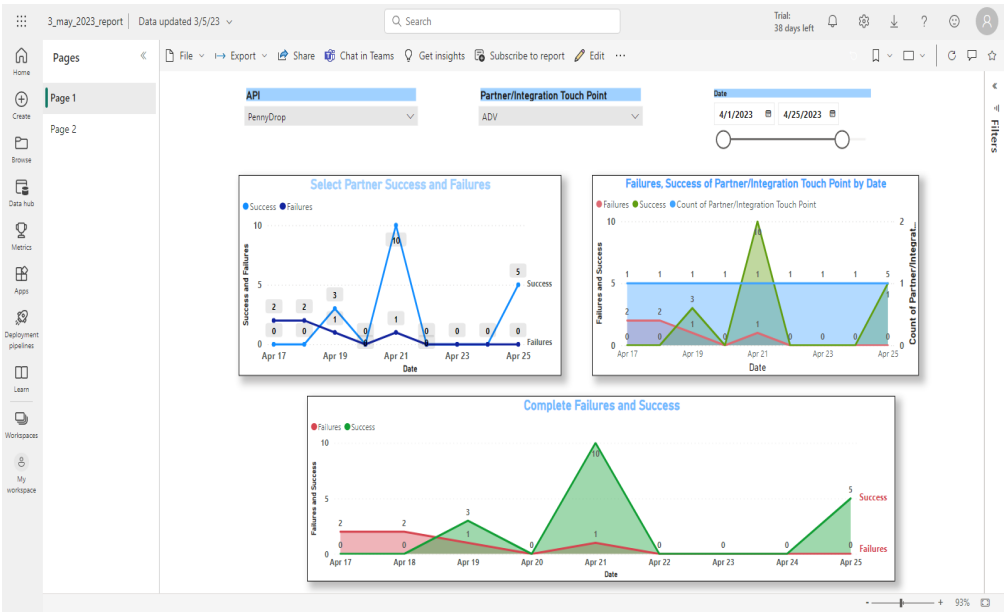

Fig No:4.1: Partners APIs Hits Failure and Success Cases.

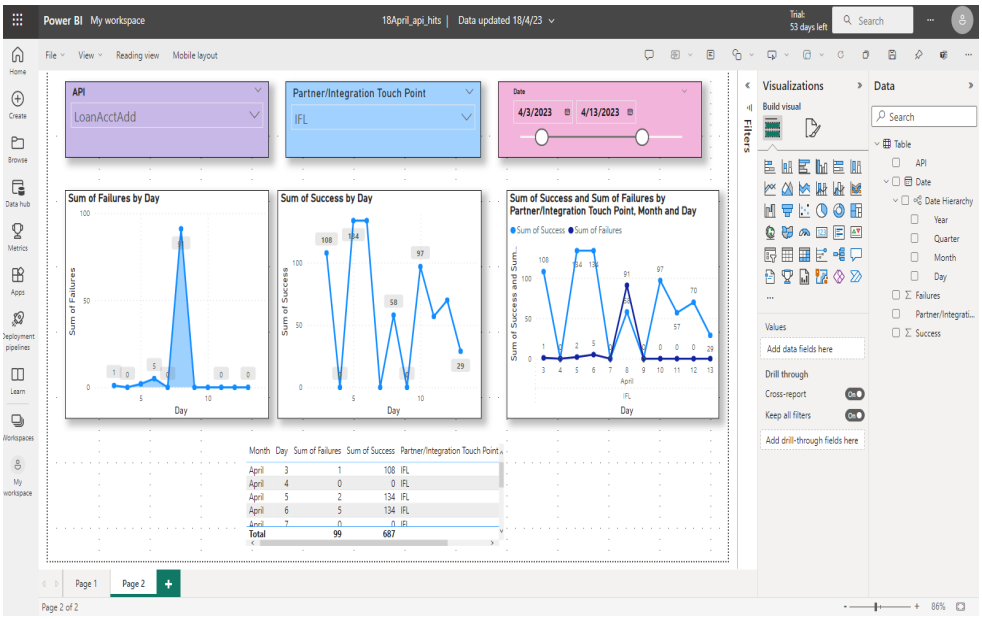

Fig No:4.2: Graphical Representation Of Partners API With Average Time Taken.

4.4.2 Power FX:

Formulas are created in Power Apps, Power Automate, and Power Virtual Agents using the low-code language Power FX. The SSFB Helpdesk Ticketing Tool leverages Power FX to build custom formulas that automate a variety of processes, such as notifying clients via email when a ticket is created or changing a ticket's status when a predetermined condition is satisfied.

4.4.3 Power Automate:

Users of Power Automate, a cloud-based tool, can create automated processes between various programmes and services. The SSFB Helpdesk Ticketing Tool makes use of Power Automate to automate a variety of procedures, such as creating a new ticket whenever an email is received in a certain mailbox and notifying a team member when a ticket is assigned to them.

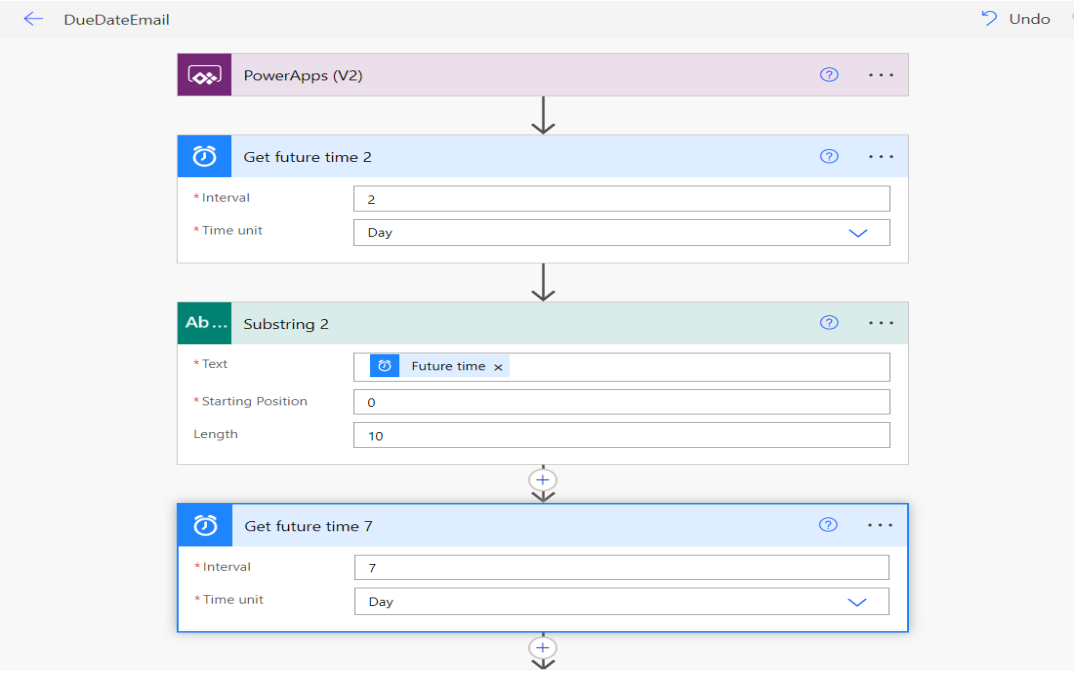

Fig No:4.3: Flow Diagram Of PowerApp

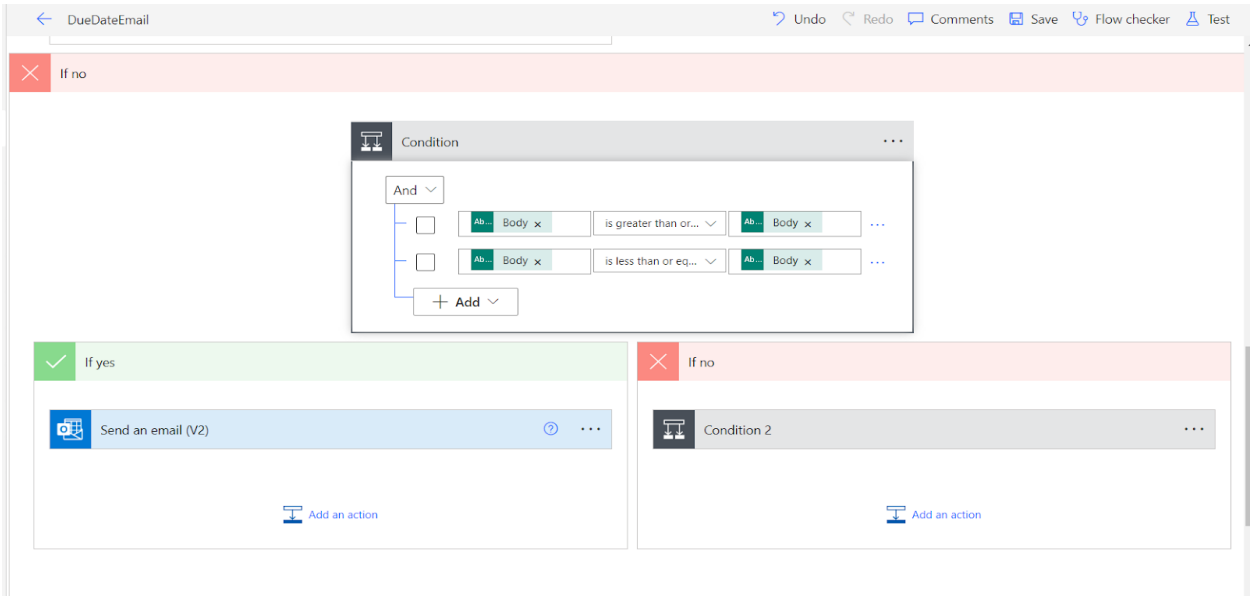

Fig No:4.4: User Authentication Permissions

4.4.4 SQL Server:

Microsoft created the relational database management system known as SQL Server. All customer support request data, including ticket information, customer information, and support team member information, is kept in the SSFB Helpdesk Ticketing Tool's SQL Server database. With its powerful security features and ability to handle big data volumes, SQL Server is the perfect choice for a helpdesk ticketing application that is expected to manage a significant amount of customer support requests.

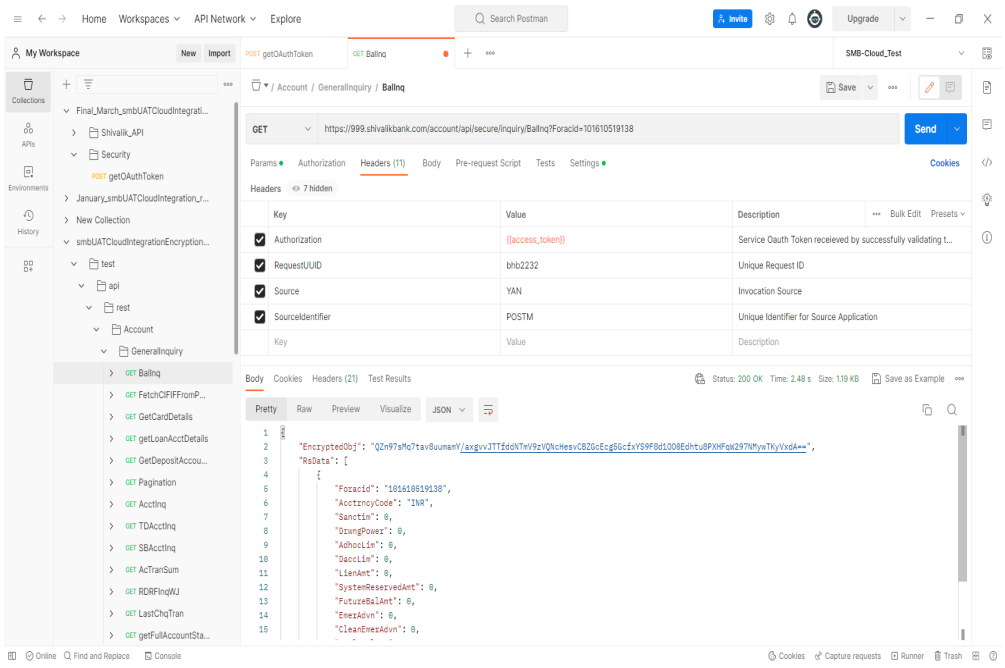

FIG NO: 4.5: Postman For APIs Testing

4.4.5 Ticket Creation:

The first step in the ticket creation process is for the customer to submit a request for support. This request can come in through various channels, such as email, phone, or chat. Once the customer submits their request, the SSFB Helpdesk Ticketing Tool creates a new ticket in the system.

The ticket creation process involves collecting important information about the customer and their support request, including the customer's name, contact information, and a detailed description of their issue. The tool may also include a priority level, which can be set by the customer or assigned automatically based on the nature of the request.

- **Ticket Assignment:**

A support team member is given responsibility for fixing the customer's issue once a ticket has been created. A team lead or manager usually oversees the

assignment process. After reviewing the ticket, they choose the best support team member for the job based on their knowledge and availability.

Team leads or managers can examine each support team member's workload in the SSFB Helpdesk Ticketing Tool and assign tickets as necessary. With the help of this feature, the support team's duty is split fairly and each member is given tickets that are appropriate for their level of expertise.

- **Ticket Updates:**

When a support staff member receives a ticket, they start addressing the customer's problem. To keep the customer updated on the status of their request, the support team member will frequently update the ticket.The process of updating a ticket entails updating the status of the ticket, adding comments on the measures taken to fix the problem, and corresponding with the customer via the tool's messaging feature. The messaging system makes it possible for members of the support staff to speak with the client directly within the application, guaranteeing that all communication is centralized and simple to find.

- **Tracking ticket status and resolution:**

Any helpdesk ticketing tool, including the SSFB Helpdesk Ticketing Tool, must be able to track ticket status and resolution. Each ticket's progress is tracked during this procedure, and it is ensured that it is resolved quickly and effectively. Updates on ticket status, monitoring of ticket resolution, and reporting on metrics related to ticket resolution are some of the crucial elements in this tracking process.

- **Ticket Status Updates:**

One of the critical aspects of tracking ticket status is keeping the ticket updated with the latest information. The support team members assigned to a ticket should update the ticket regularly with the progress of the ticket resolution. This updating process ensures that everyone involved in resolving the ticket is up-to-date with

the latest information, and it also helps the customer track the progress of their request.

- **Ticket Resolution Tracking:**

Monitoring the resolution process is a crucial part of tracking tickets. The support team members assigned to a ticket should keep a record of all the actions they took to fix the problem, including any troubleshooting processes, customer interactions, and any remedies put into place. The support team will have a record of the ticket resolution process thanks to this documentation process, which can be useful for resolving related issues in the future.

Support team members can keep track of the progress of a ticket's resolution by adding comments to the ticket using the capability included in the SSFB Helpdesk Ticketing Tool. The fact that the client and other members of the support team may see these notes guarantees that everyone is informed of the status of the ticket resolution.

- **Reporting on Ticket Resolution Metrics:**

The final step in tracking ticket status and resolution is reporting on ticket resolution metrics. These metrics can include the average time to resolution, the number of tickets resolved per day, and the number of tickets reopened after being resolved. Reporting on these metrics helps support team leads and managers identify areas for improvement in the support process and implement changes to streamline support operations.

- **Reporting capabilities:**

Reporting capabilities are a crucial aspect of any helpdesk ticketing tool, including the SSFB Helpdesk Ticketing Tool. These capabilities provide insights into the performance of the support team, help identify areas for improvement, and ensure that the support team is meeting its service level agreements (SLAs). The SSFB Helpdesk Ticketing Tool provides several reporting capabilities that

support team leads and managers can use to track the performance of the support team.

- **Customizable Reports:**

The SSFB Helpdesk Ticketing Tool's capacity to provide customisable reports is one of its primary advantages. These reports can be altered to suit the managers' and support team leads' individual requirements. The reports, for instance, can be tailored to contain particular metrics like the quantity of tickets resolved each day, the typical time to resolution, and the quantity of tickets that are reopened after being resolved.

Support team leads and managers can create reports that are tailored to their own requirements using the customization possibilities of the SSFB Helpdesk Ticketing Tool. This makes sure that the reports include the required context for understanding the performance of the support team, assisting managers and leads of the support team in identifying areas for development and making informed decisions.

- **Real-Time Reporting:**

Another key feature of the SSFB Helpdesk Ticketing Tool is its ability to generate real-time reports. This means that support team leads and managers can generate reports on the performance of the support team at any time. Real-time reporting allows support team leads and managers to monitor the performance of the support team closely and make informed decisions quickly.

4.4.6 Challenges encountered and solutions:

A helpdesk ticketing tool's implementation can come with a number of difficulties. The following are some of the difficulties that were encountered and how they were resolved with the SSFB Helpdesk Ticketing Tool.

- **Resistance to Change:** One of the most significant challenges faced during the implementation was resistance to change. Many support team members were used to using the previous system and were resistant to adopting a new tool. This challenge was addressed through extensive training and communication.

- **Technical Issues:** Another challenge encountered during implementation was technical issues with the tool, such as integration problems with existing systems. These issues were addressed by involving the IT team in the implementation process. The IT team worked closely with the vendor to ensure the tool was configured correctly and integrated seamlessly with existing systems.

- **Inadequate Training:** The new tool's complexity required extensive training for the support team members to understand how to use it effectively. To overcome this challenge, a comprehensive training program was developed, which included both classroom and on-the-job training. The team members were given adequate time to practice using the tool before its deployment.

- **Lack of User Adoption:** Another challenge faced during implementation was a lack of user adoption. Despite the extensive training provided, some team members were not using the tool as intended, leading to delays in ticket resolution and reduced customer satisfaction. To address this issue, regular follow-up sessions were conducted with the support team to provide ongoing support and encourage the correct use of the tool.

- **Inadequate Planning:** Inadequate planning during the implementation phase can lead to delays, additional costs, and poor results. To overcome this challenge, a detailed implementation plan was developed, which included timelines, milestones, and responsibilities. The plan was reviewed regularly to ensure that the project remained on track and any necessary adjustments were made promptly.

4.4.7 Key milestones and timeline for implementation :

To ensure the effective introduction of the tool, a timeframe and many important milestones were required for the implementation of the SSFB Helpdesk Ticketing Tool.

- **Requirement Gathering:** This was the first step in the implementation process, during which time the customer service team, IT team, and senior management all contributed requirements for the product. About two weeks passed during this time.

- **Platform and Tool Selection:** The choice of the best platform and tool for the help desk ticketing tool was made in the second phase. In roughly three weeks, the choice to utilize Microsoft PowerApps was made.

- **Design and Development:** The design and development phase, which lasted for roughly eight weeks, entailed creating the necessary functionality and features, designing the workflow and user interface, and testing the tool to make sure it complied with the specifications.

- **Testing and Quality Assurance:** The tool was thoroughly tested during this stage to make sure it worked as planned and adhered to the required requirements for quality. About two weeks passed during this time.

4.4.8 Impact and Benefits:

- **Increased efficiency and productivity for customer service representatives:**For customer service representatives (CSRs), improving efficiency and productivity has been made possible by the SSFB Helpdesk Ticketing Tool. The tool has helped with this in the following ways.

- **Simplified ticket generation and assignment:** The tool has simplified the ticket creation and assignment process, enabling CSRs to handle customer demands more quickly and easily. As a result, production has increased and reaction times have sped up.

- **Automated workflows:** The solution has reduced manual activities for CSRs by automating a number of workflows, including email notifications and status updates. This has increased their productivity and efficiency by enabling them to concentrate on more complicated demands.
- **Centralized communication:** By eliminating the need to transition between several programmes or systems, the tool gives CSRs a platform for Centralised Communication to manage client requirements. As a result, production has grown and resolution times have gotten quicker.

- **Improved teamwork:** The technology makes it possible for CSRs to work together and exchange information with other team members, enhancing communication and minimizing effort duplication. As a result, efficiency and productivity have grown as CSRs can more effectively collaborate to address complicated customer concerns.

4.4.9 Reduced costs and streamlined operations.

The SSFB Helpdesk Ticketing Tool has also helped the bank cut expenses and streamline operations.

- Less manual work is required because of the tool's automation of numerous procedures, including ticket creation, assignment, and notification. As a result, there have been significant cost reductions because fewer hours are needed to manage client demands.

- Efficient resource allocation is made possible by the tool's reporting and analytics features, which offer insights into consumer behavior and request patterns. Because of the decreased idle time and improved resource utilization, there have been cost reductions.

- Greater scalability with the help of the platform, the bank has been able to scale its customer service operations. The bank can handle a higher volume of customer demands with the tool's centralized communication and automated workflows without considerably raising its costs or operational overheads.

- Enhanced teamwork technology makes it possible for CSRs to work together and exchange information with other team members, enhancing coordination and minimizing duplication of effort. Because of this, the customer support process is now more simplified and effective, which lowers operational expenses and prices.

4.5 Success stories and examples of how the tool has been used in real-world scenarios.

The SSFB Helpdesk Ticketing Tool has been used in a variety of real-world scenarios to improve customer service and streamline operations.

4.5.1 Here are some success stories and examples of how the tool has been used:

- **Client issue resolution:** Resolving client issues is one of the tool's main use cases. client care employees may swiftly create, assign, and track tickets using the tool's automated workflows and centralized communication, ensuring that client issues are dealt fast and effectively.

- **Proactive communication:** The tool's notification and communication capabilities have enabled the bank to proactively communicate with customers. For example, during a service outage, the bank was able to quickly create a notification and send it to all affected customers through the tool, keeping them informed and reducing the number of customer inquiries.
- **Resource optimisation:** The bank has been able to optimize its resources thanks to the tool's reporting and analytics features. For instance, the bank was able to locate a high volume of demand for a particular product by looking at ticket data. As a result, the bank was able to devote more personnel to handling these requests, which decreased the backlog and enhanced response times.
- **Escalation management:** The bank has been able to swiftly escalate high-priority concerns to senior customer service agents or management thanks to the tool's escalation management capabilities.

4.5.2 Potential additional features and functionality that could be added.

The SSFB Helpdesk Ticketing Tool may be enhanced with the following prospective new features and functions:

- **Customer self-service portal:** To enable customers to submit tickets and check on their status independently, a customer self-service portal might be added. Customers would benefit from a more streamlined experience and customer support employees would have less work to do.
- **Social media integration:** As social media takes on growing significance as a medium for customer support, combining the ticketing tool with social media platforms may make it easier for customer service agents to handle questions and issues raised on social media.
- **Knowledge base management:** The tool could be enhanced with a knowledge base management system, giving customer care employees instant access to a database of pertinent data and resources to assist in more efficiently resolving client difficulties.

4.5.3 Opportunities for further integration with other systems or tools :

The SSFB Helpdesk Ticketing Tool can be further integrated with a variety of different programmes or devices. Here are a few illustrations:

- **CRM integration:** To provide a more thorough understanding of each client's history, preferences, and needs, the ticketing tool could be coupled with a customer relationship management (CRM) system. Customer care agents would be able to offer more effective and individualized support as a result.
- **Integration with email and calendar systems:** Using the ticketing tool in conjunction with email and calendar systems could make it easier for customer support agents to manage their schedules and prioritize their tasks. For instance, the technology might automatically set up customer appointments or notify users of outstanding tickets.
- **Integration with analytics and reporting tools:** To give users more information about the effectiveness and happiness of their customer service, the ticketing tool may be combined with analytics and reporting systems.
- **Integration with a payment gateway:** If the bank provides financial goods or services, the ticketing tool might be linked to a payment gateway to let users pay bills or start transactions right from the tool.

CHAPTER : 5

RESULT

5.1 Result:

The implementation of the tool has resulted in significant improvements in customer satisfaction, response times, and operational efficiency. The tool has also reduced costs and streamlined operations by automating many of the manual tasks previously performed by customer service representatives.

Despite the success of the tool, there are still opportunities for further development and improvement. For example, additional features and functionality could be added to enhance the tool's capabilities and integration with other systems or tools could be improved to streamline the ticketing process even further.

5.2 Other Minor Features:

5.2.1 NACH:

The National Payments Corporation of India (NPCI) created the NACH system, also known as the National Automated Clearing House, to enable electronic cash transfers between Indian bank accounts. Bulk transactions including dividends, salaries, pensions, and other recurring payments are handled via the NACH application.

The NACH system uses a batch processing approach, where transactions are gathered in groups and carried out according to a timetable. This makes it possible for the system to efficiently handle a high volume of transactions, which is crucial for processing payroll and other recurring payments.

The NACH system offers several benefits over traditional payment methods, such as:

- **Faster processing:** Since transactions are processed in batches rather than one at a time, the NACH system enables quicker payment processing. With this, payments can be credited to beneficiary accounts the same day, within one working day, or within two working days.
- **Cost-effective:** Since transactions are processed in batches rather than one at a time, the NACH system enables quicker payment processing. With this, payments can be credited to beneficiary accounts the same day, within one working day, or within two working days.
- **Secure:** The NACH system employs a number of security measures to guarantee the privacy and accuracy of transactions. These consist of two-factor authentication, digital signatures, and encryption.
- **Convenient:** The NACH system is practical for both payers and beneficiaries since it does away with the requirement for actual cheque deposits and offers continuous notifications on the status of payments.

5.2.2 AML:

Anti-Money Laundering, or AML, is a collection of rules and procedures intended to stop the use of financial systems for illegal activities like money laundering and financing terrorism. Financial institutions utilize the AML application, a piece of software, to find and alert regulatory authorities to questionable activity.The AML application typically includes several features that help financial institutions comply with AML regulations, including:

- **Customer Due Diligence:** Customers' identities are verified by the AML programme, which also continuously monitors their activity for any suspicious activity. This involves compiling data on consumers' past financial transactions, professions, funding sources, and other pertinent details.
- **Transaction Monitoring:** The AML programme tracks customer transactions in real-time and alerts users to any questionable activity, including as transactions that are excessively big, involve high-risk nations, or appear to have no clear economic justification.

- **Risk Assessment:** The AML application evaluates a customer's or transaction's risk of money laundering or supporting terrorism based on a number of variables, including the customer's country of residence, profession, and transaction history.
- **Suspicious Activity Reporting:** Financial institutions can report any suspicious actions discovered while doing client due diligence or transaction monitoring by using the AML application to submit SARs to regulatory agencies.

5.2.3 CTS:

The Reserve Bank of India (RBI) implemented the Cheque Truncation System (CTS), an electronic image-based cheque clearing system, to improve the speed and security of the processing of checks. Banks can electronically capture, process, and exchange cheque images by using the CTS programme. Physical checks are transformed into digital images under the CTS system at the bank of deposit, and the images are sent to the clearing house for additional processing.

The CTS application includes several features that enable banks to process cheque images quickly and accurately, including:

- **Image Capture:** Using specialized cheque scanners, the CTS programme takes high-quality pictures of cheque fronts and backs to ensure that all cheque information is accurately captured.
- **Image Verification:** Using cutting-edge image recognition technology, the CTS programme checks the validity of the cheque images and identifies any modifications or efforts at fraud.
- **Image Transmission:** The CTS programme speeds up and lowers the cost of processing checks by securely and effectively transmitting the images of the checks to the clearing house.

- **Reconciliation:** Banks may simply reconcile cheque transactions using the CTS programme, ensuring that all cheque images are present and that the clearing process is error-free.

5.2.4 FIS SWITCH:

The software programme Switch Xtranet was created by Fiserv, a leading provider of financial services technology worldwide. The software's goal is to give banks and credit unions a complete set of management tools for handling their electronic payment processing operations.

The Switch Xtranet application includes several features that enable banks and credit unions to process electronic payments quickly and accurately, including:

- **Payment Gateway:** The payment gateway enables banks and credit unions to process a number of payment forms, including wire transfers, ACH transactions, and payments made using credit and debit cards. To further reduce the risk of payment fraud, the payment gateway also features cutting-edge fraud detection and prevention tools.
- **Transaction Management:** Banks and credit unions can handle and follow their electronic payment transactions using the transaction management module from start to finish. This involves keeping track of transaction status, dealing with transaction errors, and tying payments to accounting systems.
- **Settlement and Reconciliation:** By automating the process of tying payment transactions to accounting systems, the settlement and reconciliation module lowers the possibility of errors and boosts the effectiveness of payment processing.
- **Reporting and Analytics:** Banks and credit unions can get comprehensive insights into their payment processing operations, including transaction volume, payment types, and transaction status, through the reporting and analytics module.

5.2.5 Switch Xtranet application:

- **Faster Payment Processing:** By processing electronic payments more quickly than with conventional payment processing techniques, the Switch Xtranet application helps banks and credit unions increase customer satisfaction.
- **Cost-Effective:** In comparison to conventional payment processing techniques, the Switch Xtranet application is more affordable since it eliminates the need for human payment processing and lowers the cost of handling and reconciling payments.
- **Improved Payment Security:** By offering sophisticated fraud detection and prevention technologies, the Switch Xtranet programme enhances payment security while lowering the risk of payment fraud.
- **Greater Efficiency:** By automating payment processing processes and lowering the possibility of payment processing errors, the Switch Xtranet programme increases the efficiency of payment processing.

5.2.6 LOS:

A software programme called a Loan Origination System (LOS) helps financial organizations automate and streamline the loan origination process. By automating processes, collecting data, and producing reports, the programme streamlines the entire loan origination process. Financial institutions may process loan applications fast and effectively with the LOS application, cutting down on turnaround times and raising client satisfaction.The LOS application includes several features that enable financial institutions to manage the loan origination process, including:

- **Loan Application Management:** Financial institutions can handle loan applications from beginning to end with the use of the LOS application, from initial application submission to loan approval or rejection.

- **Credit Scoring and Decisioning:** Financial institutions can review loan applications, assess creditworthiness, and make well-informed lending decisions with the aid of the advanced credit scoring and decisioning tools included in the LOS application.
- **Document Management:** Financial institutions can handle loan application papers through the LOS application, lowering the possibility of errors and expediting the loan origination procedure.
- **Underwriting and Approval:** Financial institutions may process loan applications quickly and effectively since the LOS application automates processes, collects data, and generates reports to streamline the underwriting and approval process.
- **Loan Servicing:** Financial institutions may manage loan payments, track payment histories, and issue loan statements thanks to the loan servicing facilities included in the LOS application.

5.2.7 PUTTY:

In the banking sector, PUTTY is a well-liked open-source SSH client and terminal emulator. PUTTY is a little programme that enables encrypted and secure communication between a client and a server.PUTTY is used in the banking sector to securely connect to and operate servers and networks on distant servers.

PuTTY provides several features that make it a popular choice in the banking industry, including:

- **Secure Shell (SSH) Protocol:** For safe and encrypted communication between the client and the server, PUTTY employs the SSH protocol. The SSH protocol offers reliable data integrity, encryption, and authentication.
- **Terminal Emulation:** Users can connect to remote servers using the terminal emulator function of PUTTY and carry out operations on the server, such as controlling servers and networks, executing commands, and reading files.

- **Port Forwarding:** Using PUTTY, users can securely communicate between other networks by forwarding network traffic from one network port to another.

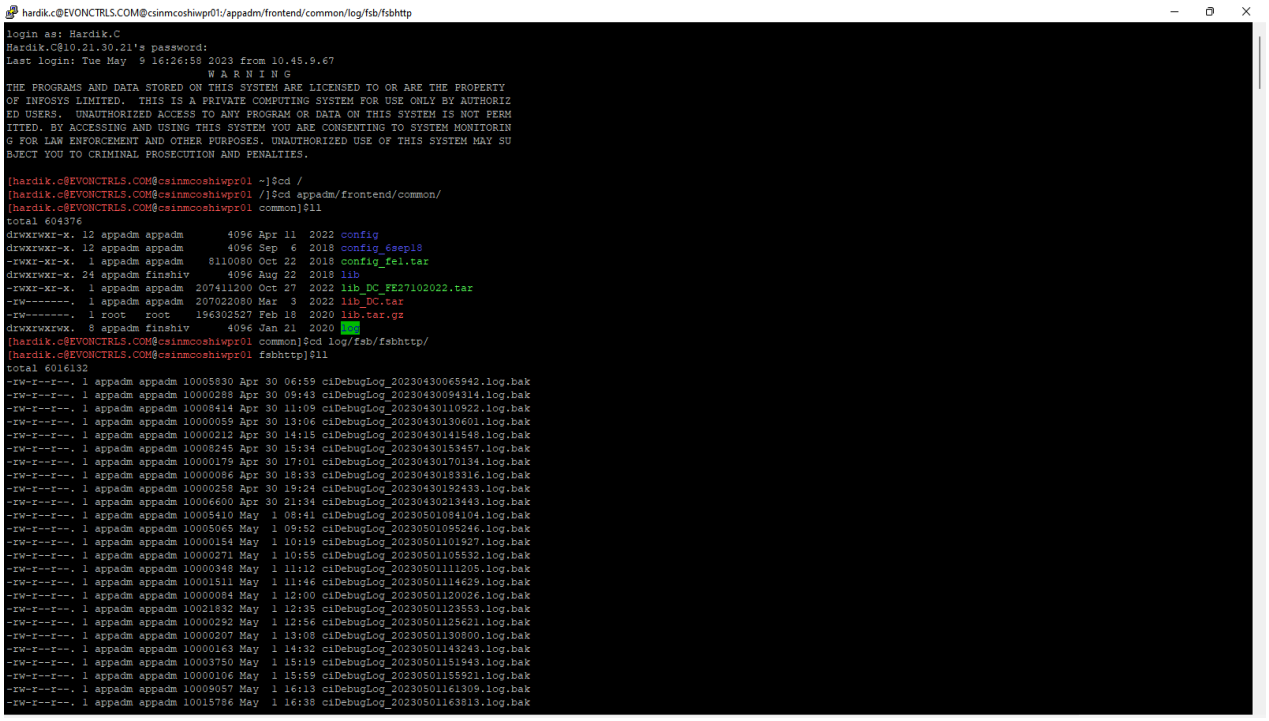

Fig No : 5.1: Putty For Backend Testing Of APIs

5.2.8 In the banking industry, PuTTY is used for several purposes, including:

- **Server Administration:** System administrators in the banking sector utilize PUTTY to control servers, network equipment, and infrastructure. Administrators can use PUTTY to connect to distant servers and carry out numerous administrative activities.
- **Secure Data Transfer:** Using PUTTY, data may be securely transferred between systems while maintaining data security and integrity.

- **Remote Access:** Banking systems can be accessed remotely and securely via PUTTY, enabling authorized people to do so from distant places.

5.3 Future Scope

- Areas where the tool can be developed and improved in the future.
- Possible future additions to the features and functionality.
- Possibilities for further system or tool integration.

Despite the fact that the SSFB Helpdesk Ticketing Tool has been effective in enhancing customer support operations, there is always room for growth and progress.

5.3.1 The following possible development areas are listed:

- **System integration:** To provide a more comprehensive perspective of client interactions and history, the SSFB Helpdesk Ticketing Tool might be further enhanced to link with other internal systems utilized by the bank, such as the customer relationship management (CRM) system.
- **AI-powered features:** Artificial intelligence (AI) is used to recognise trends in customer issues to proactively prevent issues, make intelligent recommendations for issue resolution, automate some processes, and more.
- **Multilingual support:** As SSFB's customer base grows, offering multilingual support through the ticketing application could enhance client satisfaction and lessen communication gaps.
- **Mobile accessibility:** A mobile app version of the tool might be created to give customer care employees access while they are on the go, enabling them to address questions and problems from customers from any location.
- **Real-time reporting and analytics:** Real-time reporting and analytics can be established to give information on client problems, the number of tickets, and the length of time it takes to resolve them. Making decisions based on data can help SSFB find areas for improvement

CHAPTER : 6
CONCLUSION

In conclusion, the SSFB Helpdesk Ticketing Tool is a powerful and efficient solution for managing customer service inquiries and support tickets. By leveraging Microsoft Power Apps, Power BI, Power FX, Power Automate, and SQL Server, the tool provides a robust platform for tracking, assigning, and resolving customer inquiries in a timely and efficient manner.

The implementation of the tool has resulted in significant improvements in customer satisfaction, response times, and operational efficiency. The tool has also reduced costs and streamlined operations by automating many of the manual tasks previously performed by customer service representatives.

Despite the success of the tool, there are still opportunities for further development and improvement. For example, additional features and functionality could be added to enhance the tool's capabilities and integration with other systems or tools could be improved to streamline the ticketing process even further.

Overall, the SSFB Helpdesk Ticketing Tool serves as an excellent example of how technology can be used to improve customer service and support operations. With its powerful features and functionality, the tool has helped SSFB to better serve its customers and build stronger relationships with them.

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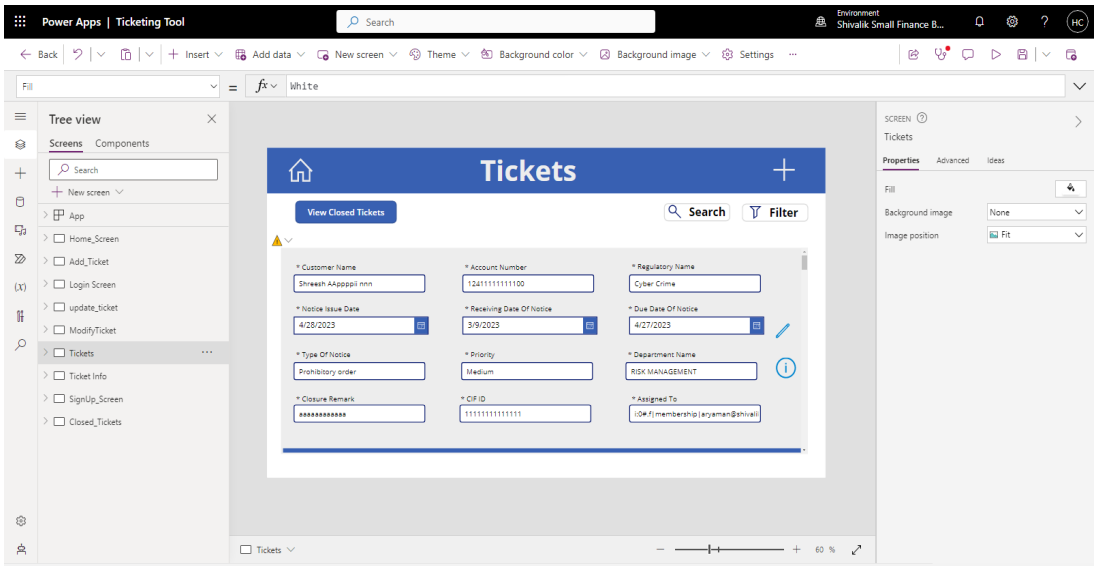
APPENDICES



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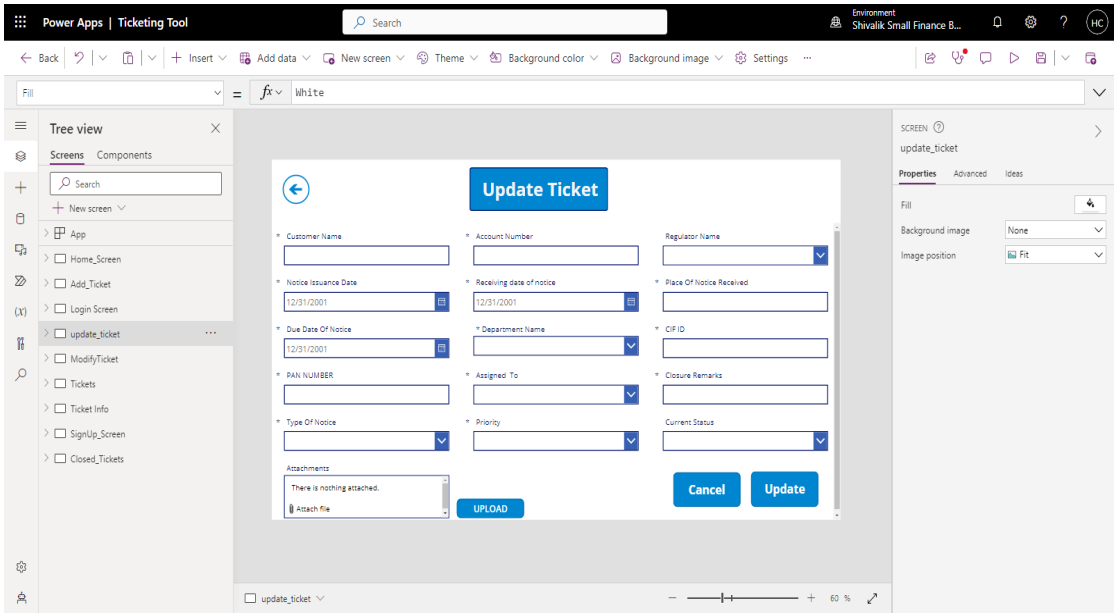

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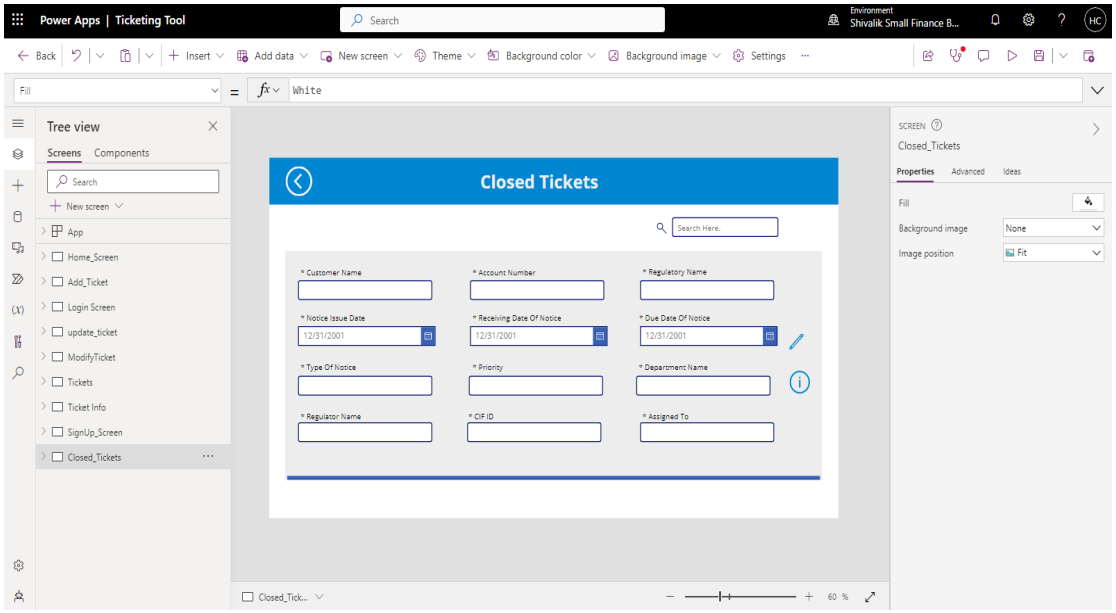

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